Science Lib
Fagon

CONTENTS

Magnesium in Plants. M. Zimmerman 1
Relationship of Seed Plant Development to the Need of Magnesium. W. S. Eisenmenger and K. J. Kucinski 13
Magnesium-Phosphorus Relationships in Plant Nutrition. E. Truog, h. J. Goates, G. C. Gerloff, and K. C. Berger 19
Some Factors Influencing the Availability of Magnesium in Soil and the Magnesium Content of Certain Crop Plants. H. P. Cooper, W. R. Paden, and W. H. Garman 27
Magnesium in Citrus Fertilization in Florida. A. F. Camp 43
Magnesium Nutrition of Apple Trees. D. Boynton 53
Effect of Magnesium on Growth and Composition of Tobacco. J. E. McMurtrey, Jr. 59
The Magnesium-Supplying Powers of 20 New Jersey Soils. A. L. Prince, M. Zimmerman, and F. E. Bear 69
The Forms and Reactions of Manganese in the Soil. G. W. Leeper 79
Differential Thermal Analysis of Hawaiian Soils. L. A. Dean 95
Determination of Electrical Conductivity of Soil Solution. J. C. Wilcox 107
Symbiotic Studies with Isolates from Nodules of Species of Astragalus. J. K. Wilson and Chi-Han Chin 119
The Nutritive Value of Plants Grown With and Without Soil. Daniel I. Arnon, Helen D. Simms, and Agnes Fay Morgan 129
Reduction of Ferric Hydroxide by Strains of Bacillus Polymyxa. James L. Roberts 135
Release of Adsorbed K, Ca, Mg, and Ba from a Soil Colloid as Influenced by the Nature of the Acidoid Link. Stephen J. Toth 141
Fixation of Potassium in Relation to Exchange Capacity of Soils: II. Associative Fixations of Other Cations, Particularly Ammonium. J. S. Joffe and A. K. Levine 151
Nutrient Culture of Crops With the Use of Synthetic Ion-Exchange Materials. Daniel I. Arnon and Karl A. Grossenbacher 159
Chemical Composition of the Colloidal Clay Fraction of Some Solodi Soils of Minnesota. A. L. Brown and A. C. Caldwell 183
Effects of Calcium Fluoride Incorporations upon Plant Growth, Fluorine and Phosphorus Uptake, and Soil pH. W. H. MacIntire, S. H. Winterberg, L. B. Clements, and H. W. Dunham 195
Base-Exchange Equilibriums in Soils and Other Exchange Materials. S. W. Melsted and Roger H. Bray 209
Effect of Certain Soil and Irrigation Treatments on Citrus Chlorosis in a Calcareous Soil: II. Soil Atmosphere Studies. Walter Reuther and C. L. Crawford 227
Fixation of Potassium in Relation to Exchange Capacity of Soils: III. Factors Contributing to the Fixation Process. J. S. Joffe and A. K. Levine 241
Books 249
A Critical Examination of a Rapid Method for Determining Organic Carbon in Soils—Effect of Variations in Digestion Conditions and of Inorganic Soil Constituents. Allan Walkley 251
Measurement of the Oxidation-Reduction Potentials of Normal and Inundated Soils. A. Quispel 265
A Laboratory Procedure for Determining the Field Capacity of Soils. E. A. Colman 277
A New Method for Estimating the Surface of Liming Materials and Other Insoluble Calcium Compounds. Earl E. Barnes 285
A New Electrical Resistance Thermometer for Soils. George John Bouyoucos 291
Characterization of the Stability of Soil Aggregates. M. B. Russell and C. L. Feng 299
Seasonal Variation in Leaf and Soil Potassium. L. K. Wood 305
The Mineralogical Approach to Some Soil Problems. Charles D. Jeffries 315

Distribution of Total and Alkali-Soluble Organic Matter Between the Whole Soil and Soil Aggregates of Dunmore Silt Loam: III. Influence of Long-time Fertility Treatments. JESSE ELSON 321
Fixation of Potassium in Relation to Exchange Capacity of Soils: IV. Evidence of Fixation Through the Exchange Complex. A. K. LEVINE AND J. S. JOFFE 329
A Modified Apparatus for Leaching Soils. IAN ARMSTRONG BLACK 337
Root Penetration and Moisture Extraction in Saline Soil by Crop Plants. C. H. WADLEIGH, H. G. GAUCH, AND D. G. STRONG 341
Colorimetric Determination of Small Amounts of Potassium by the Chloroplatinate Method. CHARLES HURWITZ AND HAROLD W. BATCHELOR 351
The Water Table, Equipotentials, and Streamlines in Drained Land: V. The Moving Water Table. E. C. CHILDS 361
Anion Exchange in Soils: I. Exchangeable Phosphorus and the Anion-Exchange Capacity. L. A. DEAN AND E. J. RUBINS 377
Anion Exchange in Soils: II. Methods of Study. E. J. RUBINS AND L. A. DEAN 389
Anion Exchange in Soils: III. Applicability to Problems of Soil Fertility. L. A. DEAN AND E. J. RUBINS 399
Fixation of Potassium in Relation to Exchange Capacity of Soils: V. Mechanism of Fixation. A. K. LEVINE AND J. S. JOFFE 407
Books 417
Soils of India: Four Soil Surveys in Gwalior State. ROBERT L. PENDLETON 421
Occurrence of Selenium in Soils and Plants of Colombia, South America. JORGE ANCIZAR-SORDO 437
Effect of Microorganisms on Permeability of Soil Under Prolonged Submergence. L. E. ALLISON 439
A Convenient Method for Estimating Carbonates in Soils and Related Materials. A. E. ERICKSON, L. C. LI, AND J. E. GIESEKING 451
Improvements in the Plaster of Paris Absorption Block Electrical Resistance Method for Measuring Soil Moisture Under Field Conditions. G. J. BOUYOUCOS AND A. H. MICK 455
Influence of Lime on the Solubility of Potassium in Soils and on Its Availability to Plants. E. T. YORK AND H. T. ROGERS 467
The Importance of Sodium for Plant Nutrition: IV. Influence of Nitrate Fertilizers on the Equilibrium of Cations in Fodder Beet. J. J. LEHR 479
Index 487